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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Young Soo Kim

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KED & ASSOCIATES, LLP

P.O. Box 8638

Reston, VA 20195

EXAMINER

BASICHAS, ALFRED

ART UNIT

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3743

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/584,893	Applicant(s) KIM ET AL.	
	Examiner ALFRED BASICHAS	Art Unit 3743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 12-23 is/are rejected.
- 7) ☒ Claim(s) 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/28/06</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-7, 10, and 12-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Schwank (4083355), which shows all of the claimed limitations. For example,

1. A burner assembly for a gas burner of radiant heating type comprising: a burner chamber 32a,33a for receiving mixed gas; a burner mat 31 on a top of the burner chamber having a combusting area 31a,31b, and at least one non-combusting area 31c; and a combustion cutoff part 33b for forming the non-combusting area of the burner mat (fig. 3).

2. The burner assembly as claimed in claim 1, wherein the combustion cutoff part includes a structure for forming the non-combusting area between a center and an outer part of the burner mat (fig. 3,4).

3. The burner assembly as claimed in claim 2, wherein the combustion cutoff part includes a cutoff plate in close contact with an upper surface or a lower surface of the burner mat for preventing the mixed gas from reaching to a surface of the burner mat, and burning (fig. 3,4).

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4. The burner assembly as claimed in claim 3, wherein the cutoff plate has a ring form when seen in a plan view (fig. 3,4).

5. The burner assembly as claimed in claim 3, wherein the cutoff plate further includes a supporting part 33 for supporting the cutoff plate to be in close contact with the burner mat.

6. The burner assembly as claimed in claim 5, wherein, in a case the cutoff plate is in close contact with a lower surface of the burner mat, the supporting part has one end fixed to a bottom surface of an inside of the burner chamber, and the other end supporting a lower surface of the cutoff plate (fig. 3,4).

7. The burner assembly as claimed in claim 5, wherein, in a case the cutoff plate is in close contact with an upper surface of the burner mat, the cutoff plate has one end fixed to a bottom surface of an inside of the burner chamber, and the other end passed through the burner mat, and connected to the cutoff plate (fig. 3,4,13).

10. The burner assembly as claimed in claim 5, wherein the supporting part has openings 36a in a side surface thereof for smooth flow of the mixed gas.

12. The burner assembly as claimed in claim 1, wherein the burner mat includes an inner burner mat 31a and an outer burner mat 31b, each having the combusting area, and a separate part between respective burner mats has the combustion cutoff part to form the non-combusting area (fig. 3,4).

13. The burner assembly as claimed in claim 12, wherein the combustion cutoff part includes; a cutoff plate in close contact with a circumference of each of the separated burner mats, and a supporting part connected to the cutoff plate having seating steps for seating the circumferences of the burner mats thereon, respectively (fig. 3,4).

14. The burner assembly as claimed in claim 1, wherein the combustion cutoff part includes a structure for forming a non-combusting area at the center part of the burner mat (fig. 3,4).

15. The burner assembly as claimed in claim 14, wherein the combustion cutoff part includes; a cutoff plate in close contact

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with an upper surface or a lower surface of the burner mat for preventing the mixed gas from reaching to a surface of the burner mat, and a supporting part for supporting the cutoff plate such that the supporting plate maintains a state in which the burner mat is in close contact with the burner mat (fig. 3,4).

16. The burner assembly as claimed in claim 15, wherein, in a case the cutoff plate is in close contact with a lower surface of the burner mat, the supporting part has one end fixed to an upper surface of an inside of the burner chamber for maintaining a state in which the cutoff plate is in close contact with the burner mat, and the other end supporting a lower surface of the cutoff plate (fig. 3,4).

17. A burner assembly for a gas burner of radiant heating type comprising: a burner chamber for receiving mixed gas; a burner mat on a top of the burner chamber having a combusting area, and at least one non-combusting area; a cutoff plate in close contact with at least one of a lower surface and an upper surface of the burner mat to form the non-combusting area in the burner mat for preventing the mixed gas from reaching to a surface of the burner mat and burning thereon; and a supporting part for maintaining a state in which the cutoff plate is in close contact with the burner mat (see previous claims).

18. A burner assembly for a gas burner of radiant heating type comprising: a burner chamber for receiving mixed gas; and a burner mat part on top of the burner chamber, including; an inner burner mat and an outer burner mat each having a combusting area, and a separated part between the inner burner mat and the outer burner mat having a non-combusting area (see previous claims).

19. The burner assembly as claimed in claim 18, wherein the separated part between respective burner mats includes; a cutoff plate in close contact with a circumference of an upper surface of each of the burner mats, and a supporting part connected to the cutoff plate having seating steps for seating the circumference of each of the burner mats (see previous claims).

20. The burner assembly as claimed in claim 19, wherein the separated part between respective burner mats further includes a connecting member (sealing ring 33b) for connecting the burner mats, and surrounding a part of the connected part (fig. 3,4).

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21. A burner assembly for a gas burner of radiant heating type comprising: a burner chamber for receiving mixed gas; a burner mat on a top of the burner chamber having a non-combusting area at a center; a cutoff plate in close contact with at least one of a lower surface and an upper surface of the burner mat to form the non-combusting area in the burner mat for preventing the mixed gas from reaching to a surface of the burner mat; and a supporting part for maintaining a state in which the cutoff plate is in close contact with the burner mat (see previous claims).

22. A burner assembly for a gas burner of radiant heating type comprising: a burner chamber for receiving mixed gas; and a burner mat on top of the burner chamber having a combusting area for making combustion, and at least one non-combusting area for making no combustion (see previous claims).

23. The burner assembly as claimed in claim 22, wherein the non-combusting area of the burner mat is formed of a material that permits no surface combustion different from the combusting area (see previous claims).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

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2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schwank (4083355), which discloses substantially all of the claimed limitations. Nevertheless, Schwank fails to specifically recite connecting components using screws. Official Notice is given that the use of screws for connecting components is old and well known in the art. Such an arrangement has the clear and obvious benefit of providing for convenient assembly and disassembly. Accordingly, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate screws into the invention disclosed by Schwank, so as to provide for convenient assembly and disassembly.

Allowable Subject Matter

7. Claim 11 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Prior Art

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. These references disclose a radiant burner with many of the claimed components. Nevertheless, in order to avoid overburdening the applicant with redundant rejections, these references were not applied.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alfred Basichas whose telephone number is 571 272 4871. The examiner can normally be reached on Monday through Friday during regular business hours.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Tech Center telephone number is 571 272 3700.

July 27, 2011

/Alfred Basichas/
Primary Examiner, Art Unit 3743